

Notes on *Stephanoprora polycestus* (Dietz) From the American Crow

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In March, 1934, three crows (*Corvus brachyrhynchos brachyrhynchos*) were received from Havana, Illinois. They had been taken in a cage trap and were fed "fish" for several days before they came into my hands through the kindness of Dr. David H. Thompson and other members of the research staff of the Illinois State Natural History Survey. Trematode ova were found in the feces of each crow on the third day after they were received which was roughly two weeks after their capture and first feeding of fish. Three weeks later, 19, 19, and 6 specimens of *Stephanoprora polycestus* Dietz, 1909 were taken from the middle ileum of each of them respectively. Since each carried the same species of worm and the specimens were in the same stage of development (all mature and very uniform in size) it is possible that all became infected at the same time, from the same source, and therefore from the fish on which they were fed.

Although there are but a few points on which my observations differ from previous descriptions of *S. polycestus*, a brief description is added to the report of its incidence. Body length, 4.4 to 4.8 mm; length 10 X greatest width at level of anterior testis. Measurements in microns on an average specimen 4.8 mm long are: width of collar, 249; diameter of acetabulum, 275; oral sucker, 146 by 130; pharynx, 144 by 118; ovary, 130 by 100; anterior and posterior testes respectively, 378 by 283 and 522 by 193; ova, 52 by 84 to 58 by 80. In all specimens, body length 8.28 to 6.60 X pre-acetabular region, 2 to 2.2 X post-testicular region and 11.2 to 12.6 X the region between acetabulum and ovary. Rather stout cuticular spines, 12 to 16 μ in length, are restricted to the pre-acetabular region dorsally but reach to the anterior testis ventrally. The mid-ventral pre-acetabular area is without cuticular spines. There are 22 cephalic spines of nearly equal size arranged into right and left rows separated dorsally and ventrally by a space about equal to the width of the oral sucker. The two posteriormost spines on each side are smaller than, and are distinctly aboral or posterior to the 9 remaining ones (Fig. 2, 3). The largest cephalic spine is 40 to 42 μ by 12 to 14 μ . The uterus is of moderate length and contains from 40 to 75 ova. The length of the cirrus sac is roughly equal to the diameter of the acetabulum and reaches to about the center of that organ (Fig. 1). In good preparations this species may be seen to possess a uroproct. This structure is partially covered by the vitellaria, which probably accounts for the fact that it has not been observed previously in this species (Fig. 1, 4).

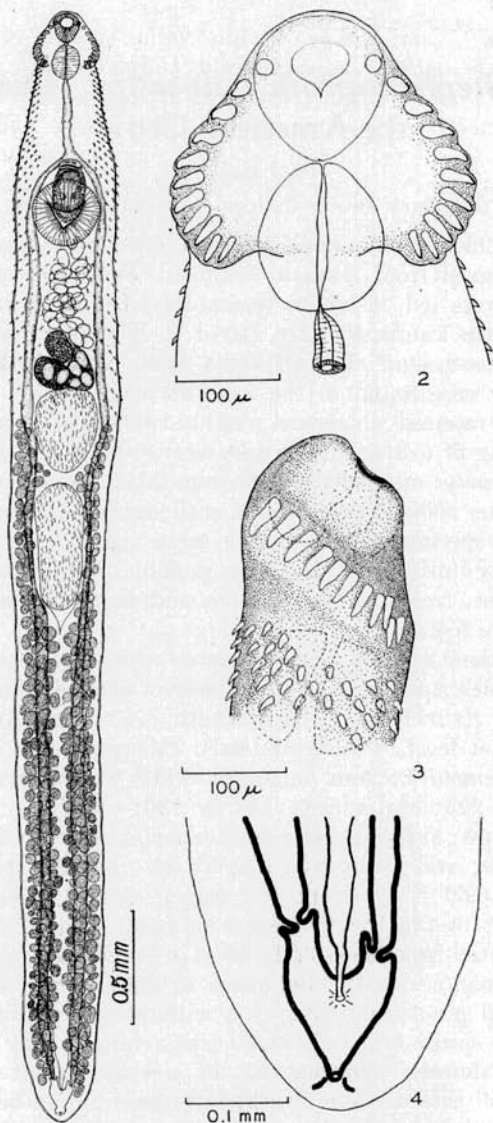


Fig. 1.—*Stephanoprora polycestus*. VENTRAL VIEW OF TYPICAL SPECIMEN FROM THE CROW. CAMERA LUCIDA DRAWING.

Fig. 2.—HEAD CROWN. VENTRAL VIEW. CAMERA LUCIDA DRAWING OF CLEARED SPECIMEN.

Fig. 3.—HEAD CROWN. LATERAL VIEW. CAMERA LUCIDA DRAWING OF OPAQUE SPECIMEN.

Fig. 4.—POSTERIOR END SHOWING CONNECTIONS OF EXCRETORY BLADDER AND INTESTINAL CECA WITH UROPROCT.

Discussion.—There are ten or less valid species of echinostomes that belong to the genus *Stephanoprora* Odhner, 1902 (= *Mesorchis*, Dietz, 1909 = *Monilifer* Dietz, 1909 nec *Mesorchis* Linton, 1910) as it was originally described (Odhner, 1902, 1910). One finds in the literature several other species that might cause some confusion with the true members of this genus. *Mesorchis urna* Linton, for example is a member of the Allocradiinae, Linton's genus *Mesorchis* being created independent of the genus *Mesorchis* Dietz, 1909 (= *Stephanoprora* Odhner, 1902); *Monilifer pitangi* Lutz, 1924 is taxonomically misplaced, it being a member of the genus *Echinochasmus* Dietz, 1909; and *S. anomala* Travassos, 1922 is too imperfectly known to allow systematic treatment. As a result of a study of the variability to be observed in specimens of *S. denticulatus* (Rud., 1802) from various hosts from different regions Odhner (1910) was led to regard *Ech. pseudoechinatum* (Ols., 1876), *Mesorchis polycestus* Dietz, 1909 and (?) *Ech. spinulosum* (Rud. nec Dietz) as synonyms of *S. denticulatus*, and he also regarded *Monilifer spinulosus* Dietz, 1909 (nec Rud.) as a synonym of *S. spinosa* Odhner, 1910, it being necessary to create the new name because "*spinulosa*" was preoccupied. My own study of this group as well as an earlier study (Beaver, 1936) of the genus *Echinostoma* leads me into agreement with Odhner on all species excepting *S. polycestus*. I regard it as distinct from *S. denticulatus* because of its more anteriorly disposed vitellaria, more extensive uterus and relatively smaller suckers and head crown. *S. gilberti* Ward, 1917, which was reported and briefly described by Gilbert (1905) as *Ech. spinulosum* and renamed by Ward (1917, 1918) is apparently identical with *S. spinosa* Odhner. Although I regard *S. polycestus* as a valid species I am inclined to disregard the one point of description on which it may be considered to disagree with the worms described above from the crow. In both text and figure (Dietz, 1910, p. 453, Textfig. M²) its cephalic spines are represented as having distinctly flat bases. All of the related species have bluntly rounded bases which sometimes appear to be nearly flat. I am doubtful if this can be a real difference. *S. reynoldi* Bhalerao, 1926 and *S. merulae* Yamaguti, 1933 are doubtless both identical with *S. polycestus*. The author of the first mentioned separated it from *S. polycestus* because of very slight differences in the ratio of the suckers and position of the cirrus sac, both of which are variable within limits which are quite unavoidable even when uniform methods of fixation are used. Egg size, length of spines, and extent of the vitellaria were regarded as unique in *S. merulae*. There is a difference of only 6 to 9 microns in the size of the eggs in the three species (*merulae*, *reynoldi*, *polycestus*). The spines of each are about equal in size when compared with the size of the worm, the longest being about one one-hundredth the total length of the body in each. The vitellaria in each reaches well up along the sides of the anterior testis. *S. merulae* and *S. reynoldi* were each described from single specimens that were fairly immature, having just begun egg

formation. *S. denticulatoides* Isaitschikow, 1924 from the dog is apparently also identical with *S. polycestus*, although it is somewhat smaller. Its maximum length is only 4.2 mm.

It is therefore probable that the nine species included in the following key constitute the only valid species of the genus *Stephanoprora*; and the worms described above from the crow, *Corvus b. brachyrhynchos*, are North American representatives of the species *S. polycestus*.

KEY TO THE SPECIES OF THE GENUS STEPHANOPRORA ODHNER, 1902
(= *Mesorchis*, Monilifer)

- | | | | | |
|-----|-------|--|------------------------------------|----|
| 1. | (2) | Cephalic spines 26 in number..... | <i>ornata</i> Odhner, 1902 | |
| | (3) | Cephalic spines 24 in number..... | <i>ozakii</i> (Asada, 1926) | |
| 3. | (1,2) | Cephalic spines 22 in number..... | | 4 |
| 4. | (11) | Vitellaria distinctly posterior to junction of testes..... | | 5 |
| 5. | (6) | Acetabulum wider than body proper...singularis (Lutz, 1924) | | |
| 6. | (5) | Acetabulum not wider than body proper..... | | 7 |
| 7. | (10) | Angle spines distinct from border spines..... | | 8 |
| 8. | (9) | Vitellaria extend to middle of posterior testis..... | <i>denticulatus</i> (Rud., 1802) | |
| 9. | (7) | Vitellaria confined to post-testicular region..... | <i>microtestius</i> (Kurova, 1927) | |
| 10. | (4) | Angle spines not distinct from border spines..... | <i>pendula</i> (Looss, 1899) | |
| 11. | (3) | Vitellaria at junction of testes or more anterior..... | | 12 |
| 12. | (15) | Uterus very short, being less than length of region of body anterior to genital pore..... | | 13 |
| 13. | (14) | Body stout; testes large, occupying $\frac{1}{4}$ to $\frac{1}{2}$ of hind-body..... | <i>spinosa</i> Odhner, 1911 | |
| 14. | (12) | Body slender; testes occupying less than $\frac{1}{4}$ of hind-body..... | <i>conciliata</i> (Dietz, 1909) | |
| 15. | (11) | Uterus of medium length, being greater in length than the region of body anterior to genital pore..... | <i>polycestus</i> (Dietz, 1909) | |

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